

Amendments to the Claims

A detailed list of all claims under examination is set out below. Please amend claims 79 and 100 as shown below in marked form:

Claims 1-38 (cancelled).

39. (withdrawn): An electronic display structure comprising:

- a display comprising a plastic substrate;
- a first transparent layer of conductive barrier material deposited over the substrate, the conductive barrier material comprising a conductive oxide, metal or metal nitride; and
- a first layer of organic polymer deposited contiguous to the first transparent layer.

40. (withdrawn): An electronic display structure comprising:

- a display comprising a plastic substrate;
- a first layer of organic polymer deposited over the substrate; and
- a first transparent layer of conductive barrier material deposited contiguous to the first organic polymer layer, the conductive barrier material comprising a conductive oxide, metal or metal nitride.

Claims 41-49 (cancelled).

50. (withdrawn): A process for fabricating a composite structure comprising:

- providing a substrate;
 - depositing a first transparent layer of conductive barrier material over the substrate, the conductive barrier material comprising a conductive oxide, metal or metal nitride; and
 - depositing a first organic polymer layer contiguous to the first transparent layer;
- wherein said composite structure comprises a display.

Claims 51-72 (cancelled).

73. (withdrawn): The display structure of claim 39 wherein the display is between two dyads each comprising a layer of organic polymer material contiguous to a layer of conductive barrier material.

74. (withdrawn): The display structure of claim 73 further comprising one or more additional dyads comprising an additional transparent layer of conductive barrier material and a transparent layer comprising an organic polymer, a dielectric, a metal or a conductive oxide.

75. (withdrawn): The display structure of claim 40 wherein the display is between two dyads each comprising a layer of organic polymer material contiguous to a layer of conductive barrier material.

76. (withdrawn): The display structure of claim 75 further comprising one or more additional dyads comprising an additional transparent layer of conductive barrier material and a transparent layer comprising an organic polymer, a dielectric, a metal or a conductive oxide.

Claims 77-78 (cancelled).

79. (currently amended): An electronic device on a plastic substrate, at least one side of the device being protected from reaction with or incorporation of moisture by a composite barrier comprising multiple layers of transparent conductive oxide separated by one or more vacuum-deposited in-situ polymerized organic layers ~~of organic dielectric polymer~~.

80. (previously presented): A device according to claim 79 wherein the transparent conductive oxide comprises an indium tin oxide.

81. (previously presented): A device according to claim 79 further comprising an acrylic hardcoat.

82. (previously presented): A device according to claim 79 wherein a layer of the transparent conductive oxide has a sheet resistance less than 150 ohms/square.

83. (previously presented): A device according to claim 79 wherein the device comprises a light emissive device.

84. (withdrawn): An electronic device on a substrate, comprising a water vapor-resistant transparent composite barrier under or over the device, the composite barrier comprising multiple barrier layers of transparent conductive oxide, transparent metal, or transparent conductive metal nitride, separated by at least one layer of organic dielectric polymer.

85. (withdrawn): A device according to claim 94 wherein a layer of organic polymer is between the substrate and the composite barrier.

86. (withdrawn): A device according to claim 95 further comprising a layer of organic polymer between the substrate and the first or second barrier.

87. (withdrawn): A device according to claim 84 wherein the composite barrier comprises an amorphous layer.

88. (withdrawn): A device according to claim 84 wherein a barrier layer comprises conductive oxide.

89. (withdrawn): A device according to claim 84 wherein a barrier layer comprises tin doped indium oxide.

90. (withdrawn): A device according to claim 84 wherein a barrier layer comprises one or more of cadmium oxide, tin oxide, indium oxide, zinc oxide, gallium-containing oxide, and magnesium oxide, which oxides may be doped.

91. (withdrawn): A device according to claim 84 wherein an optically enhanced three layer configuration comprising adjacent layers of:

- a) conductive oxide, metal, and conductive oxide;
- b) conductive oxide, metal nitride, and conductive oxide;
- c) metal nitride, metal, and metal nitride; or
- d) conductive oxide, metal, and metal oxide

is substituted for one or more transparent conductive oxide barrier layers.

92. (withdrawn): A device according to claim 84 wherein the organic dielectric polymer is crosslinked.

93. (withdrawn): A device according to claim 84 further comprising a hardcoat layer.

94. (withdrawn): A device according to claim 84 wherein the composite barrier is between the substrate and the device.

95. (withdrawn): A device according to claim 84 wherein the device has at least two sides and (a) a first composite barrier on a first side of the device comprising multiple barrier layers of transparent conductive oxide, transparent metal, or transparent conductive metal nitride, separated by at least one layer of organic dielectric polymer, and (b) a second composite barrier on a second side of the device comprising multiple barrier layers of transparent conductive oxide, transparent metal, or transparent conductive metal nitride, separated by at least one layer of organic dielectric polymer.

96. (withdrawn): A device according to claim 95 wherein the layers of organic dielectric polymer are crosslinked.

97. (withdrawn): A device according to claim 95 wherein the first and second composite barriers further comprise one or more pairs of a layer of organic dielectric polymer and a layer of transparent conductive oxide, transparent metal, or transparent conductive metal nitride.

98. (withdrawn): A device according to claim 95 further comprising at least one layer of transparent inorganic dielectric material.

99. (withdrawn): A device according to claim 98 wherein the inorganic dielectric material comprises a metal oxide or metal nitride.

100. (currently amended): A device according to claim 79 wherein the device has at least two sides each of which is protected by such a composite barrier.

101. (withdrawn): A device according to claim 84 comprising one or more transparent metal barrier layers and one or more conductive or dielectric transparent metal nitride barrier layers.

102. (withdrawn): A device according to claim 84 wherein the device comprises a plastic flat panel display.

103. (withdrawn): A device according to claim 84 wherein the device comprises a liquid crystal display.

104. (withdrawn): A device according to claim 84 wherein the device comprises a light emitting device.

105. (withdrawn): A device according to claim 84 wherein the device comprises an organic light emitting device.

106. (withdrawn): A device according to claim 84 wherein the device comprises a field emission device.

107. (withdrawn): A device according to claim 84 wherein the device comprises an electroluminescent device.

108. (withdrawn): A device according to claim 84 wherein the substrate comprises a flexible plastic.

109. (withdrawn): A device according to claim 84 wherein the device comprises a flexible display.

110. (withdrawn): A device according to claim 84 having an oxygen permeability less than 0.01 cc/m²*day and a water vapor permeability less than 0.01 g/m²*day.

111. (withdrawn): A device according to claim 84 having a water vapor permeability less than 0.001 g/m²*day.

112. (withdrawn): A device according to claim 84 wherein the composite barrier excludes moisture and atmospheric gases that degrade the performance of the device.

113. (withdrawn): A device according to claim 84 wherein the composite barrier has low enough resistivity to function as an electrode for the device.

114. (withdrawn): A device according to claim 84 wherein one or more of the barrier layers is an electrode.

115. (withdrawn): A process for fabricating an oxygen- and water vapor-resistant electronic device comprising:

- a) providing an electronic device on a substrate; and
- b) depositing over the substrate or device a barrier comprising in either order (i) a coating comprising organic material and (ii) a coating comprising transparent conductive barrier material comprising conductive oxide, metal or conductive metal nitride.

116. (withdrawn): A process according to claim 115 wherein the coating comprising transparent conductive barrier material is deposited before the coating comprising organic material.

117. (withdrawn): A process according to claim 115 wherein the coating comprising organic material is deposited before the coating comprising transparent conductive barrier material.

118. (withdrawn): A process according to claim 115 wherein the transparent conductive barrier material is amorphous.

119. (withdrawn): A process according to claim 115 wherein the transparent conductive barrier material is a conductive oxide.

120. (withdrawn): A process according to claim 115 wherein the transparent conductive barrier material comprises tin doped indium oxide.

121. (withdrawn): A process according to claim 115 wherein the transparent conductive barrier material comprises a cadmium oxide, tin oxide, indium oxide, zinc oxide or magnesium oxide.

122. (withdrawn): A process according to claim 115 wherein the coating comprising transparent conductive barrier material is deposited as an optically enhanced three layer configuration comprising coatings of metal oxide or transparent conductive oxide; metal or metal nitride; and metal oxide or transparent conductive oxide.

123. (withdrawn): A process according to claim 115 wherein the coating comprising organic material is deposited as a monomer and crosslinked to form an organic polymer.

124. (withdrawn): A process according to claim 115 further comprising depositing a hardcoat on the substrate, device or previously deposited coatings.

125. (withdrawn): A process according to claim 115 comprising depositing a coating comprising transparent conductive barrier material so that the coating is between the substrate and the device.

126. (withdrawn): A process according to claim 115 comprising depositing (i) a first coating comprising organic material over the substrate or device, (ii) a first coating comprising transparent conductive barrier material over the first coating comprising organic material and (iii) a second coating comprising organic material over the first coating comprising transparent conductive barrier material.

127. (withdrawn): A process according to claim 126 wherein the first and second coatings comprising organic material are deposited as monomers and crosslinked to form organic polymers.

128. (withdrawn): A process according to claim 126 comprising depositing one or more pairs of a coating comprising transparent conductive barrier material and a coating comprising organic material, over the second coating comprising organic material.

129. (withdrawn): A process according to claim 115 further comprising depositing at least one coating comprising transparent dielectric material.

130. (withdrawn): A process according to claim 115 comprising depositing multiple pairs of a coating comprising transparent barrier material and a coating comprising organic material wherein the transparent barrier material of at least one of the pairs comprises a dielectric material.

131. (withdrawn): A process according to claim 130 wherein the device has at least two sides and at least one such pair is deposited on each side of the device.

132. (withdrawn): A process according to claim 115 wherein at least one coating comprising metal is deposited between coatings comprising metal nitride.

133. (withdrawn): A process according to claim 115 wherein the device comprises a plastic flat panel display.

134. (withdrawn): A process according to claim 115 wherein the device comprises a liquid crystal display.

135. (withdrawn): A process according to claim 115 wherein the device comprises a light emitting device.

136. (withdrawn): A process according to claim 115 wherein the device comprises an organic light emitting device.

137. (withdrawn): A process according to claim 115 wherein the device comprises a field emission device.

138. (withdrawn): A process according to claim 115 wherein the device comprises an electroluminescent device.

139. (withdrawn): A process according to claim 115 wherein the substrate comprises plastic.

140. (withdrawn): A process according to claim 115 wherein the device comprises a flexible display.

141. (withdrawn): A process according to claim 115 wherein the device has an oxygen permeability less than about 0.01 cc/m²*day and a water vapor permeability less than about 0.01 g/m²*day.

142. (withdrawn): A process according to claim 115 wherein the device has an oxygen permeability less than about 0.001 cc/m²*day and a water vapor permeability less than about 0.001 g/m²*day.

143. (withdrawn): A process according to claim 115 wherein the barrier excludes moisture and atmospheric gases that chemically degrade the performance of the device.

144. (withdrawn): A process according to claim 115 wherein the barrier has low enough resistivity to function as an electrode for the device.

145. (withdrawn): A process according to claim 115 comprising depositing a plurality of electrodes comprising the transparent conductive barrier material.

146. (withdrawn): A device according to claim 84 comprising a flexible light emitting device.